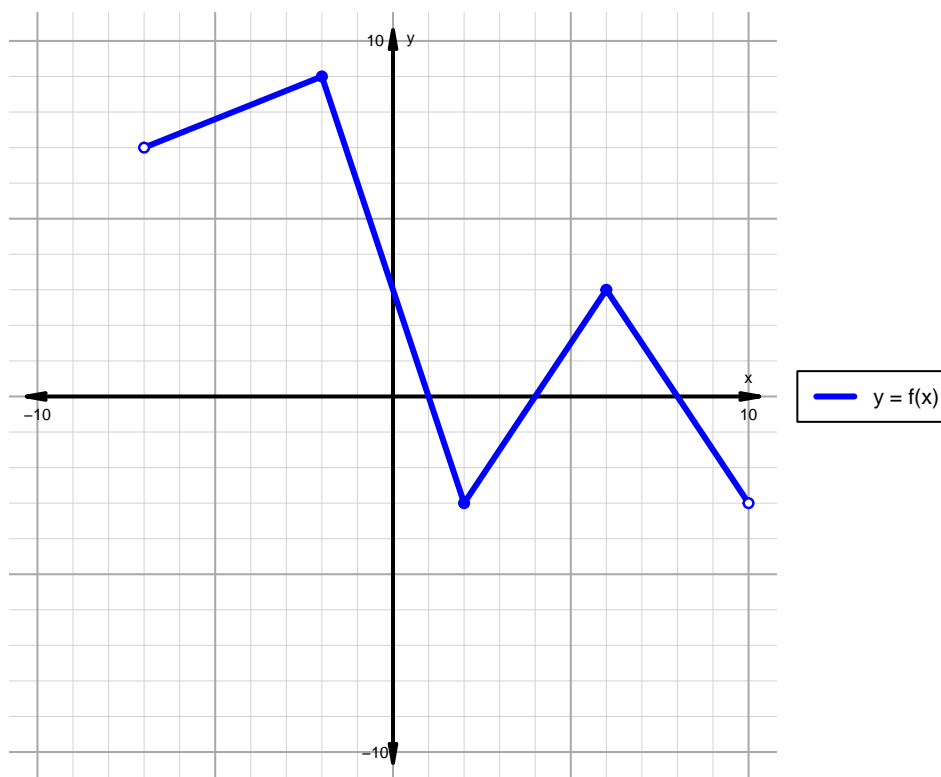


Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Intervals, Transformations, and Slope Solution (version 123)**

1. The function  $f$  is graphed below.

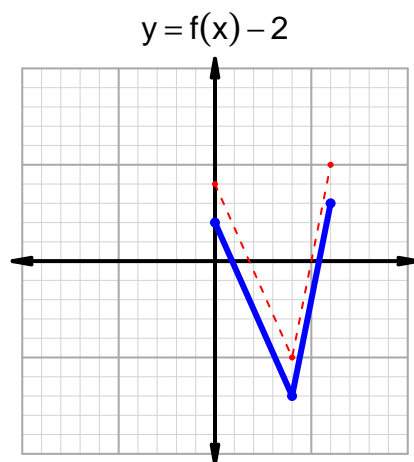
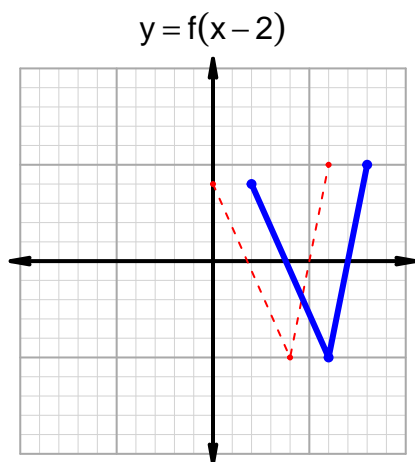
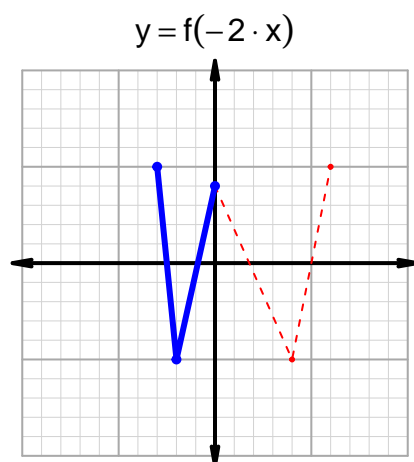
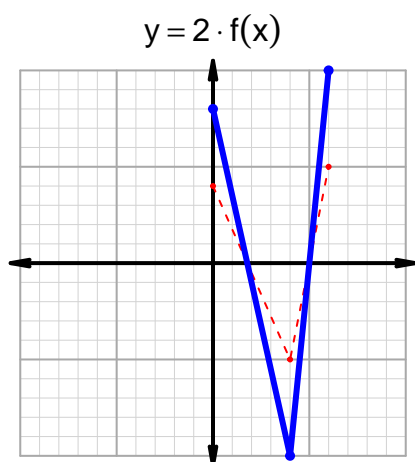


Indicate the following intervals using interval notation. Remember, you can use  $\cup$  between two intervals to indicate the union. Except for range, all intervals will indicate  $x$  values; this is standard.

Feature	Where
Positive	$(-7, 1) \cup (4, 8)$
Negative	$(1, 4) \cup (8, 10)$
Increasing	$(-7, -2) \cup (2, 6)$
Decreasing	$(-2, 2) \cup (6, 10)$
Domain	$(-7, 10)$
Range	$(-3, 9)$

## Intervals, Transformations, and Slope Solution (version 123)

2. In the four graphs below,  $y = f(x)$  is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function  $g$  be defined by the table below. Use the formula  $\frac{g(x_2) - g(x_1)}{x_2 - x_1}$  to find the average rate of change between  $x_1 = 16$  and  $x_2 = 88$ . Express your answer as a reduced fraction.

$x$	$g(x)$
16	27
27	88
88	91
91	16

$$\frac{f(88) - f(16)}{88 - 16} = \frac{91 - 27}{88 - 16} = \frac{64}{72}$$

The greatest common factor of 64 and 72 is 8. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{8}{9}$$